THE SCIENTIFIC AMERICAN.

THE ADVOCATE OF INDUSTRY AND ENTERPRISE, AND JOURNAL OF MECHANICAL AND OTHER IMPROVEMENTS.

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THE SCIENTIFIC AMERICAN
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(The Principal Office being at New York,)

By RUFUS PORTER.

Each number of this paper is furnished with from two to five ORIGINAL ENGRAVINGS, many of them elegant, and illustrative of NEW INVENTIONS, SCIENTIFIC PRINCIPLES, and CURIOSITIES; and contains as much Interesting Intelligence as six ordinary daily papers, consisting of notices of the progress of Mechanical and other Scientific Improvements,—American and Foreign Inventions; Catalogues of American Patents,—Scientific Essays, illustrative of the principles of the Sciences of MECHANICS, CHEMISTRY, and ARCHITECTURE;—Instruction in various Arts and Trades;—Curious Philosophical Expements;—Miscellaneous Intelligence, Poetry and, occasionally, Music.

TERMS.—"The Scientific American" will be furnished to subscribers at $2, per annum,—one dollar in advance, and the balance in six months.

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Any person procuring four or more subscribers, will be entitled to a commission of twenty-five cents each.

TERMS OF ADVERTISING.—For 10 lines, or less, 50 cents for the first, and 12 1-2 cents for every subsequent insertion.

Thirty Years Ago.

I've wander'd in the village, Tom,
I've sat beneath the tree,
Upon the school-house play ground,
Which sheltered you and me.
But none were there to greet me, Tom,
And few were left to know,
That played with us upon the green,
Some thirty years ago.

The grass is just as green, Tom;
Barefooted boys at play,
Were sporting, just as we did then,
With spirits just as gay.
But the "master" sleeps upon the hill,
Which coated o'er with snow,
Afforded us a sliding place,
Just thirty years ago.

The old school-house is altered some—
The benches are replaced
By new ones, very like the same
Our penknives had defaced.
But the same old bricks are in the wall,
The bell swings to and fro—
It's music just the same, dear Tom,
'Twas thirty years ago.

The boys were playing some old game,
Beneath that same old tree—
I do forget the name just now—
You've played the same with me
On that same spot: 'twas played with knives
By throwing so and so,
The loser had a task to do—
There, thirty years ago.

The river's running, just as still,
The willows on its side
Are larger than they were, Tom,
The stream appears less wide—
But the grape-vine swing is ruined now,
Where once we played the beau,
And swung our sweethearts—"pretty girls"—
Full thirty years ago.

Near by the spring, upon an elm,
You know I cut your name,
Your sweetheart's just beneath it, Tom,
And you did mine the same,
Some heartless wretch had peeled the bark,
'Twas dying sure but slow,
Just as the one whose name you cut
Died thirty years ago.

My lids have long been dry, Tom,
But tears came in my eyes,
I thought of her I loved so well,
Those early broken ties.
I visited the old church yard
And took some flowers to strew
Upon the graves of those we loved
Some thirty years ago.

Some are in the church yard laid—
Some sleep beneath the sea,
But few are left of our old class
Excepting you and me.
And when our time is come, Tom,
And we are called to go,
I hope they'll lay us where we played,
Just thirty years ago.

Pay Up.

[The Editor of the "Dollar Democrat," published in Louisiana, thus calls upon his indebted subscribers to pay up:]

Come ye signers, proud and lowly,
Rich and ragged, lean and fat,
Come, fork over what you owe me,
For the Dollar Democrat!

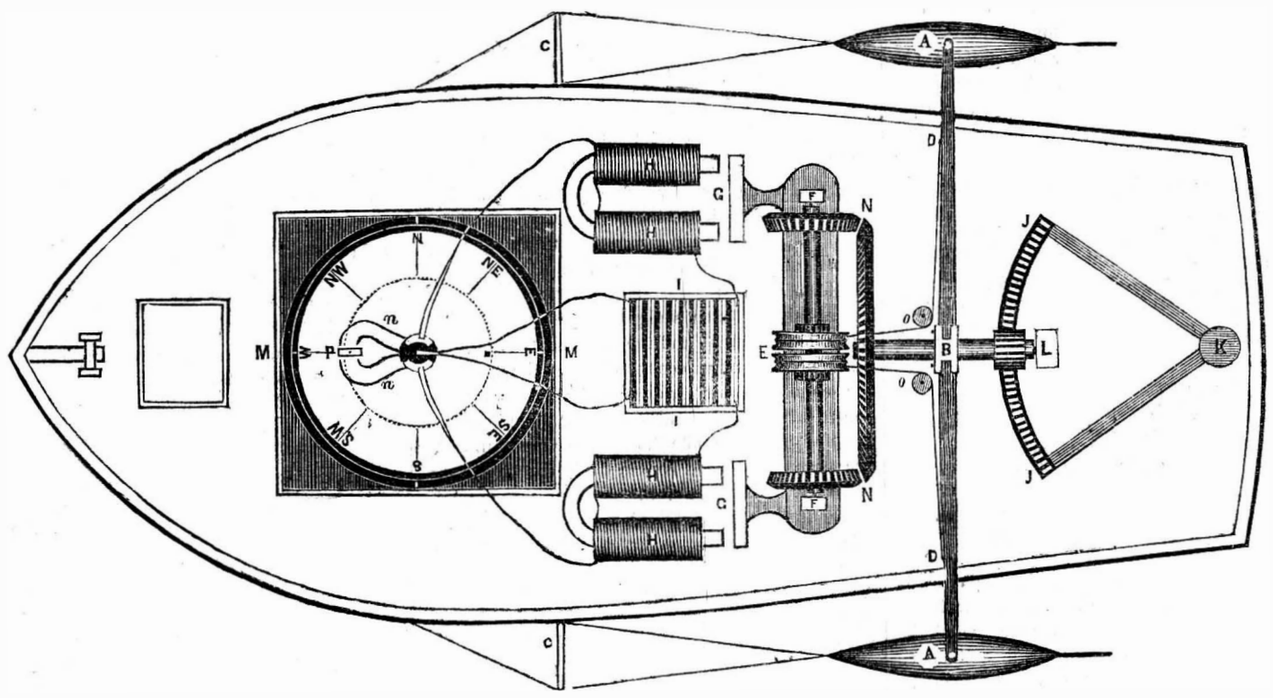
The printer's anxious to receive it,
Ah! he sadly needs the chink,
Every dollar bright, believe it,
Due for paper, rent and ink.

Pray don't hesitate, ye signers!
Of the printer's pittance think—
Send, oh send the silver shiners!
Quickly, Cash us, or we sink!

A Love Letter.

Oh come to me this very eve, for I am all alone,
A weeping by my writing desk and pa and ma have gone.
They say that you are going off—that pa has used you ill,
But if he has depend upon't his daughter never will.

ELECTRO-STEERING APPARATUS FOR SHIPS.



EXPLANATION.—We explained, in a late number, a simple mode whereby an extensive power might be obtained without expense, for working a ship's pumps, and intimated that it might also be applied to other purposes. We also explained, [in number 21,] the sudden effect of closing and breaking the circuit of a galvanic battery. We now present a mode of applying the power of the undulating float or buoy, to a geer-wheel on the deck of a ship, and also a mode of connecting this power to the helm on the right or left, as occasion, indicated by the position of the needle of the compass, may require. We have in this instance been constrained to present the representation of the several parts of the apparatus, without regard to their respective proportions. We have given a slight representation of the outlines of the deck of a vessel, for the sake of shewing the floats whence the power is derived; but have drawn the machinery on a scale ten times as large, in proportion, as is eventually intended, and the compass is represented on a scale much larger than the other parts. But the whole apparatus in full size, and large enough for steering a ship, will not require a space exceeding five feet by four. It will be seen that this is a mere vertical view of the deck and machinery, and that no elevations are shown; but the vertical connections will be described, though not shown in the engraving. The revoloidal floats, A A, and the lever-beams, A B, have been described in a former number. These floats rest on the surface of the water, and are connected by iron rods to the projecting arms, C C, and each float is also connected by a vertical rod to the extreme ends of the lever beams, so that the beams are made to vibrate vertically by the undulations of the water. From the point D of each lever, a cord passes down to the deck, under a pulley, thence horizontally, over another pulley O, and thence to the large pulleys, E. These pulleys turn freely in one direction on the shaft, F F, but are restricted by ratchets and clicks from turning in the other direction, without turning the shaft with them; consequently, by the motion of the two levers the shaft is kept in constant motion;—the driving pulleys being returned by spiral springs, as often as the levers descend. The posts, F F, which support this shaft, are attached at the bottom, to the two ends of a horizontal plank, which is secured to the deck by a vertical pivot, through its centre, directly under the driving pulleys. From the forward side of each end of this plank an arm projects forward and is attached to an armature G, and these two armatures are adjusted to the poles of two electro-magnets, the prongs of which are enclosed in helices, H H H H, and a current of electricity is made to pass occasionally through either pair of helices from the plate battery, I I. A quadrant J J K, is attached to the rudder post K, and the section J J is furnished with geer teeth, which take to those of a pinion on a shaft, which extends horizontally forward from the post L to a small iron post near the large pulleys. On the forward end of this shaft is a bevel geer-wheel, N N, the teeth of which are nearly in contact with those of two smaller geer wheels on the shaft F F. It will be seen, by this arrangement, that when either of the armatures are attracted to its respective magnet, the small geer wheel on the opposite side will take to the large wheel N N, and by thus putting the quadrant in motion, change the position of the helm. A compass, M M, is placed in front of the battery, and on the dial thereof is a circular card of about half the diameter of the dial, and near the edge of this card is a small silver plate, P, mounted on a delicate vertical pin. The glass over the compass has an orifice in its centre, which is filled with a piece of cork; a piece of silver wire passes down through the centre of the cork, and branching into two parts, terminates very near the plate P, on both sides; and two other wires extending from the positive pole of the battery, unite near the centre of the cork, and press gently on the head of the centre wire. On the two sides of the cork are two minute silver segments, each of which communicates with a short wire, n n, which, extending from the bottom of the cork, terminates very near the forward side of the silver plate. Two other wires extend from the negative pole of the battery to the helices and thence to the cork centre, and terminating in delicate silver plates, rest each on one of the silver segments. Thus it may be seen that if the ship deviates in the least from its present course, the silver plate will close one of the two galvanic circuits, which will induce magnetic power in its corresponding magnet, and produce such a connection of the geer wheels as will change the position of the rudder in a direction to restore the ship to its true course. The present course of the vessel is supposed to be west: but the position of the card containing the silver plate, may be changed at pleasure; and by placing the silver plate,—which is the true governor of the course of the ship,—in the direction of any point of the compass, the helm will be so affected as to head the ship in that direction till its position is again changed.

SELLING A DAUGHTER.—A letter dated Damascus, Oct. 10th says: "A man was found the other day in the public market offering his daughter for sale. Being a Christian, he was sent to the Patriarch by Mr. Mish, the dragoman, who prevented it. His story was a simple one: 'I'm a weaver; on account of the cheap English goods my trade has been put a stop too. I have a wife, a mother, and seven children to support—When I sold everything we had, I tried to beg, but no one would give. I could get no other work. We have had no bread for the last three days. I thought of selling one of my children to keep the others from starving. I was offered 500 piasters ($20) for this girl, and I would have sold her had it not been for Mr. Mish, who sent me here.'"

DISCOVERY OF THE MAGNETIC POLES.—Dr. Locke of Cincinnati, has recently delivered a lecture in that city on the subject of electro-magnetism and heat. This discourse is mentioned as being particularly interesting, containing amongst kindred topics an account of the discoveries he had made, and the acts accumulating in regard to the magnetic poles, and the lines of greatest intensity. This has been a subject of examination with him for several years. He considers now that the magnetic poles are discovered—at least their immediate locality. His views on this subject have been confirmed by other observers. One of the magnetic poles is in Siberia, and another in the Northern part of America. The line of the greatest intensity is near the shores of Lake Superior.

THE OLDEST TREE IN THE WORLD.—Mr. Loudon, in a late work, gives an engraving of the cypress of Somma, in Lombardy, perhaps the oldest tree on record. There is an ancient chronicle extant at Milan, which proves it to have been a tree in the time of Julius Cæsar, forty-two years before Christ. It measures one hundred and twenty-one feet in height and twenty-three in circumference at one foot from the ground. It was respected by Napoleon, who, when laying down the plan for his great road over the Simplon, diverged from a straight one, to avoid injuring the tree.

THE NAVIGATION OF THE RIVER ST. CROIX.—The inhabitants of Calais, Maine, and its neighboring towns, seem to have taken up, in earnest, the project which we mentioned last week, of making the River St. Croix navigable, by the aid of canals and locks. The chief object which they hope to obtain, is a more ready transport of timber to the mills and sea shore, and the second is a boat navigation from salt water to the head waters of the river. A meeting was held at Calais on the 15th ult., at which a committee was appointed for the purpose of ascertaining the cost of the undertaking, and devising what measures, if any, should be taken immediately.

A CHEEIFUL WIFE.—A good writer has remarked that a woman may be of great assistence to her husband by wearing a cheeeful smile continually upon her countenance. A man's perplexities and gloominess are increased ten fold, when his better half moves about with a continued scowl upon her brow. A pleasant, cheerful wife is as a rainbow set in the sky, when her husband's mind is tossed with storms and tempests; but a dissatisfied and fretful wife, in the hour of trouble, is like one of those fiends who are appointed to torment him.

A BLACK MAN'S RECIPE FOR COOKING RICE IN HIS OWN WORDS.—Wash him well—much washed in cold water—the rice flour make him stick, wash all quite away—water boil already very fast, throw rice in, can't burn, water shake him so much. Boil quarter of an hour or more—rub one rice in thumb and finger; if all rub away, him quite done. Put rice in cullender—hot water go away. Pour cup of cold on him Put back rice in saucepan—keep him covered near the fire; then rice all ready. Eat him up.

A SUPERFLUOS SUGGESTION.—A country gentleman, who had taken some pains to instruct the rustic inhabitants in the proper signs of respect due to him, being riding on a horse given to shy, and observing a lad walking before him, called out, 'Boy, don't take off your hat?" The youth, turning his head very innocently, replied, "I worn't a going to, sir."

THE UNIVERSAL YANKEE NATION.—A writer in the London Times shows the prospective greatness and increase of the United States.

In 1830 a census of the people was taken, and the numbers were	12,000,000
In 1840 it was again taken; the numbers then were	17,000,000
In 1850, at the same rate, there will be	24,083,333
In 1860,	34,118,052
In 1870,	48,270,059
In 1880,	68,292,184
In 1890,	96,619,364
In 1900,	137,102,513

BEAUTIES OF RUMSELLING.—The following is one of the paragraphs from a circular issued in the city of Philadelphia:

This district, (Moyamensing) has a population of over 14,000. It has 242 groggeries, and during the past two years there has been sold in small quantities over 10,000 barrels of liquor. Over 400 sober men made drunkards, over 260 families ruined, over 900 children left destitute, 100 coroner's inquests, and over 400 persons sent by committing magistrates to prison.

TO MECHANICS.—A mechanical trade is justly considered one of the most certain modes of obtaining a comfortable subsistence, and he who is in possession of one, if blessed with health, may with certainty become an independant man. So valuable is a trade considered by the Jews, that one of their standing regulations is, that every man shall have one. In this country the road to riches is open to the mechanic, equally with any other class. Every mechanic may, by a prudent use of his savings, command all the comforts of life, and bring up his family reputably.

TO MAKE CALICOES WASH WELL.—Infuse three quarts of salt in four quarts of boiling water, and put the calicoe in while hot, and leave it till cold. And in this way the colors are rendered permanent and will not fade by subsequent washing! So says a lady who has frequently made the experiment erself.

PATENT LAWS.

(Continued from No 22.)

SEC. 15. That the defendant in any such action shall be permitted to plead the general issue, and to give this act and special matter in evidence, of which notice in writing may have been given to the plaintiff or his attorney, thirty days before trial, tending to prove that the description and specification filed by the plaintiff, does not contain the whole truth relative to his invention or discovery, or that it contains more than is necessary to produce the described effect; which concealment or addition shall fully appear was not the original and first inventor or discoverer of the thing patented, or of a substantial and material part thereof claimed as new, or that it had been described in some public work anterior to the supposed discovery thereof by the patentee, or had been in public use or on sale with the consent and allowance of the patentee before his application for a patent, or that he had surreptitiously or unjustly obtained the patent for that which was in fact invented or discovered by another, who was using reasonable diligence in adapting and perfecting the same; or that the patentee, if an alien at the time the patent was granted, had failed and neglected, for the space of eighteen months from the date of the patent, to put and continue on sale to the public, on reasonable terms the invention or discovery for which the patent issued; and whenever the defendant relies in his defence on the fact of a previous invention, knowledge or use of the thing patented, he shall state in his notice of special matter, the names and places of residence of those whom he intends to prove to have possessed a prior knowledge of the thing, and where the same had been used; in either of which cases, judgment shall be rendered for the defendant, with costs: *Provided, however*, That whenever it shall satisfactorily appear that the patentee, at the time of making his application for the patent believed himself to be the first inventor or discoverer of the thing patented, the same shall not be held to be void on account of the invention or discovery, or any part thereof, having been before known or used in any foreign country; it not appearing that the same, or any substantial part thereof, had before been patented or described in any printed publication; *And provided, also*, That whenever the plaintiff shall fail to sustain his action on the ground that in his specification or claim is embraced more than that of which he was the first inventor, if it shall appear that the defendant had used or violated any part of the invention justly and truly specified and claimed as new, it shall be in the power of the court to adjudge and award, as to costs, as may appear to be just and equitable.

SEC. 16. That whenever there shall be two interfering patents, or whenever a patent or application shall have been refused on an adverse decision of a board of examiners, on the ground that the patent applied for would interfere with an unexpired patent previously granted, any person interested in any such patent, either by assignment or otherwise in the one case, and any such applicant in the other case, may have remedy by bill in equity; and the Court having cognizance thereof, on notice to adverse parties, and other due proceedings had, may adjudge and declare either the patents void in the whole or in part, or inoperative and invalid in any particular part or portion of the United States, according to the interest which the parties to such suit may possess in the patent or the inventions patented, and may also adjudge that such applicant is entitled, according to the principles and provisions of this act, to have and receive a patent for his invention, as specified in his claim, or for any part thereof, as the fact of priority of right or invention shall, in any such case, be made to appear. And such adjudication, if it be in favor of the right of such applicant, shall authorize the Commissioner to issue such patent, on his filing a copy of the adjudication, and otherwise complying with the requisitions of this act: *Provided, however*, That no such judgment or adjudication shall affect the rights of any person, except the parties to the action, and those deriving title from or under them subseqeunt to the rendition of such judgment.

SEC. 17. That all actions, suits, controversies, and cases arising under any law of the United States, granting or confirming to inventors the exclusive right to their inventions or discoveries, shall be originally cognizable, as well in equity as at law, by the circuit courts of the United States, or any district court having the powers and jurisdiction of a circuit court; which courts shall have power, upon a bill in equity filed by any party agrieved, in any such case, to grant injunctions, according to the course and principles of courts of equity, to prevent the violation of the rights of any inventor as secured to him by any law of the United States, on such terms and conditions as said courts may deem reasonable: *Provided, however*, That from all judgments and decrees from any such court rendered in the premises, a writ of error or appeal, as the case may require, shall lie to the Supreme Court of the United States, in the same manner and under the same circumstances as is now provided by law in other judgments and decrees of circuit courts, and in all other cases in which the court shall deem it reasonable to allow the same.

To be continued.

KEEP YOUR DISTANCE.—The Pledge and Standard relates the following incident of a Philadelphia son of Neptune:

A clever sailor has lately joined the Sons of Temperance in Philadelphia, after running a course of dissipation by which his means were pretty well exhausted. At the time of signing the pledge he was intebted to a rumseller one shilling. A few days ago he went to pay off the score, but being determined not to enter the house in which he had been robbed, he got a long pole, attached the piece of money to the end of it, and standing at the outside of the door, reached it to the astonished publican, and marched off with a jolly heart.

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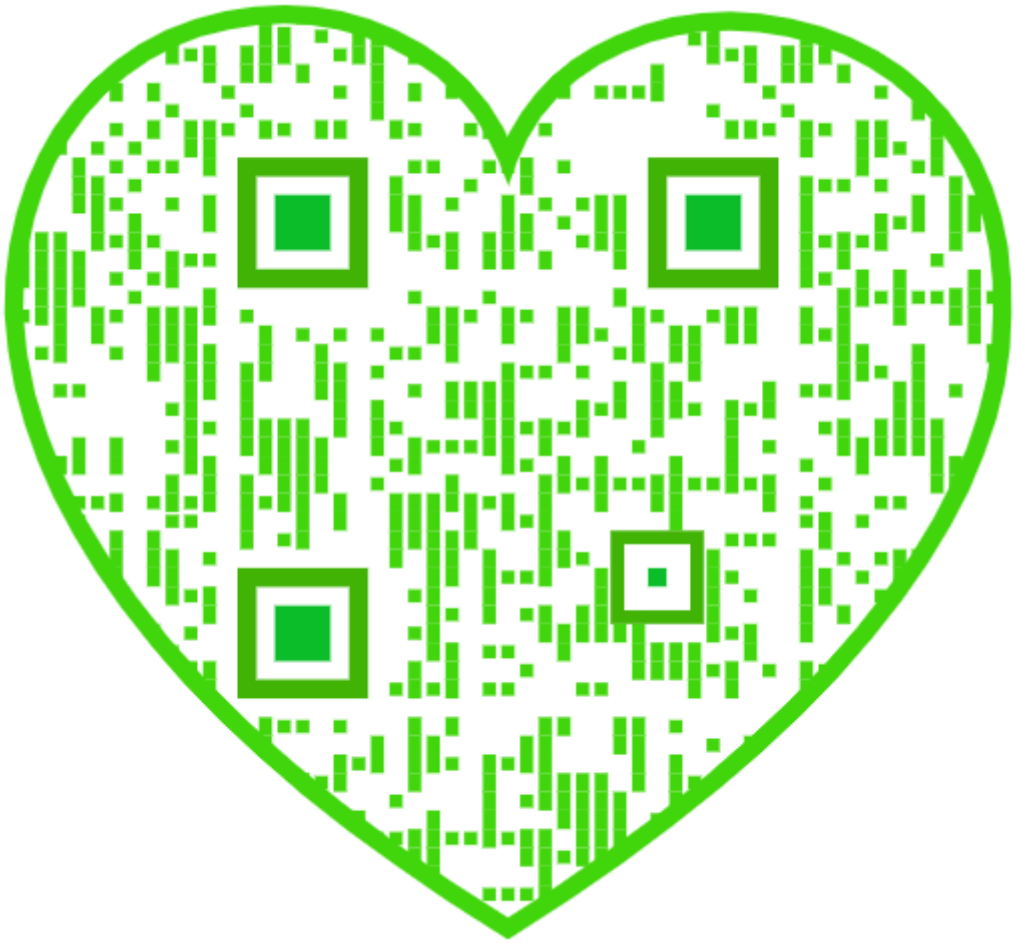
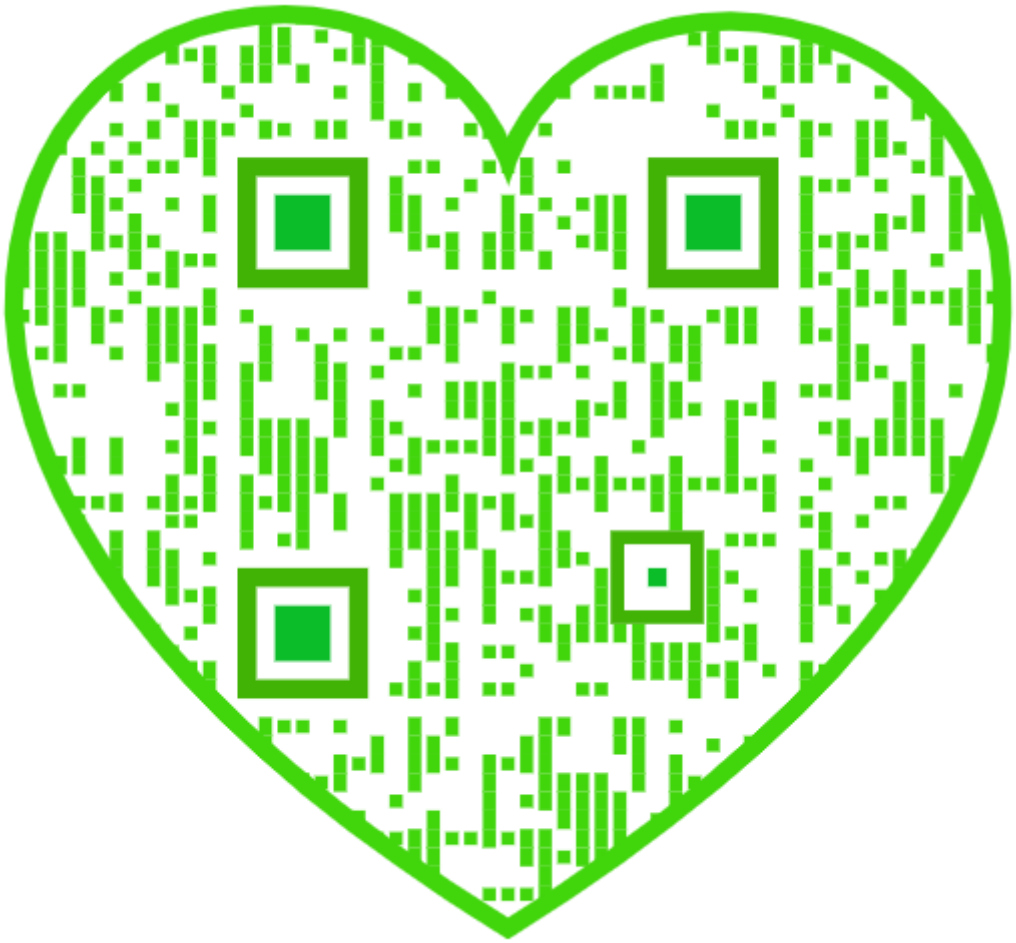




SCIENTIFIC AMERICAN

NEW-YORK, THURSDAY, FEBRUARY 19.

AGENTS WANTED.—Many travelling and local agents are wanted, to introduce and extend the circulation of this paper, in every principal village in the United States.

POST MASTERS—Who receive this paper, will confer a special favor by mentioning the subject occasionally to scientific mechanics.

BACK NUMBERS—AGAIN.—Our readers are aware of the occasion of delay in re-printing the early numbers of this paper. We can now assure them, that an engraver is already employed in preparing new engravings, to supply the place of those lost by the conflagration, and other arrangements are made for re-printing the eight first numbers, as soon as we can obtain reasonable intelligence with regard to the extent of the editions required.

TO CORRESPONDENTS.—We are constrained to plead an unusual press of business; but shall attend to the information required by S. F., of Lubec, G. M'Q., of Washington, J. G. of Phil., C. D. W. of Hebron, H. of Boston, S. T. of Birmingham, and "An Enquirer" of N.Y., forthwith. We would inform M. S., of Jacksonville, that we have prepared the intelligence which he requires, but could not make room for it in this number.

A WORD FOR OURSELVES.—Several of our good natured subscribers, probably in consideration of our October frolic in Spruce street, have already sent us the second remittance,—the ballance of a year's subscription. They may reasonably expect that the paper will be materially improved after our receipts of the second half yearly payments and we may venture to whisper softly to others, that as early a remittance as may be convenient for them, will be more especially convenient for us.

OUR FIRST PAGE.—Our principle illustrative embellishment in this number, has cost us more labor and expense than anything of the kind hitherto presented. Our scientific friends will readily discern the principle and practicability of attaching to a marine vessel an apparatus that will effectually guide its course without requiring a "man at the helm." This plan for producing power by the vertical motion of revoloidal floats, may be so extended as to apply a hundred horse powers to a propelling wheel, especially when the sea is rough and turbulent.

FALSE LIGHT.—It seems to have been the policy of some of the English artists and mechanics in the last century, to disseminate darkness rather than light concerning the arts, by themselves practised. And many books were accordingly published, under the title of "Secrets in Arts and Trades," "Five hundred receipts," &c., which were filled with what purported to be true instructions in the arts, but were in fact, at least most of them, ridiculous absurdities, and utterly at variance with correct principles of either mechanics or chimistry. Yet we frequently see those *recipes* copied into modern newspapers and re-copied by others, thus extending an unfavorable influence against the progress of the true light of scientific knowledge, in the minds of those who have not a sufficient knowledge of scientific principles to detect the errors.

A PHENOMENON.—The Missouri Statesman gives the following account of a phenomenon which occurred on the night of the 25th ult., in the lake opposite Rocheport:—"A tremendous crash was heard about 4 o'clock in the morning, and several persons visited the lake at daylight. From the appearance of the ice, it was evident that it had been upheaved with great violence, by the agency of some subterranean power. Large pieces of ice stood on end on every side of the spot at which the 'great deep' had been broken up; and in some places large heaps of the 'frozen element' had been made from six to twelve feet high. Upon the surface of the unbroken ice around the spot where the breach was made, lay numbers of fish, some of large size; also quantities of mud, most evidently dislodged from the bottom of the lake. The water in the lake is about ten feet deep."

PHONOGRAPHY.—Mr. Hudson delivered an introductory lecture, at Clinton Hall, on Tuesday evening, in which he succeeded in convincing a large number at least, of those present, that his system, —that is Pitman's system,—is decidedly superior to either of the many systems of stenography, that has been introduced. This system is evidently based on rational principles, and is very easy to learn and practice, and well worthy the attention of all business men. Mr. Hudson proposes to instruct a class of 100 persons in a course of twelve lessons, for one dollar each.

THE INMAN GALLERY.—This gallery is now open at the Art Union Rooms, No 322 Broadway. (We were erroneously informed on this subject last week) Tickets may be obtained at 352 Broadway, or at the Gallery. Season tickets 50 bents; single admision 25 cents. The exhibition is to continue open only a short time, and every person who cherishes admiration of excellence in the fine arts, or sympathy for the bereaved should secure a ticket without delay.

A WORKING MAN.—Dr. Tabor, editor of the Northampton Democrat, says he is acting as editor, publisher, foreman and apprentice, working daily at the case or press; and that the only time he has to attend to the editorial department, is in the evening after his regular ten hours' work is finished.

EXTRAORDINARY FORTUNE.—An English fortune amounting to *forty millions of dollars*, and which has been in Chancery fifty years, is now likely to fall to a man named Jennings of New Castle Maine. We hope it will not ruin the man.

Illustrations of Chemistry.

(Continued from No. 22.)

THE METALS.—Copper is of a reddish color, sonorous, malleable and brilliant. It may be alloyed with most of the other metals, forming some of the most beautiful, useful and durable alloys that is known. It is soluble in either sulphuric or nitric acid, and forms beautiful blue crystals.

IRON is of all metals the most useful, and is the most extensively used in the arts. It becomes very malleable by being heated, and is capable of being welded at a heat far below its fusing point. It is attracted by the magnet and is itself rendered magnetic—has a great affinity for oxygen, and is readily soluble in acids.

ZINC is a fusible metal, softer than iron, though its fraeture appears similar. It is combustible, and readily soluble in acids; and in combination with other metals, form some excellent alloys.

TIN is a white metal, similar in appearance to silver, but very fusible, and readily tarnishes by exposure to the atmosphere. It is alloyed with copper, and with the fusible metals; and is readily soluble in acids.

ANTIMONY is of a duskey white color, not extensively used in a metallic state, except in the composition of printing types.

BISMUTH has the peculiar property of rendering other metals fusible by being alloyed with them.

EXPERIMENTS.—Melt together four parts of bismuth, two of lead and one of tin. This compound, or any articles made of it, may be melted on a paper over a lamp, without scorching the paper.

Melt together in a crucible, three parts of copper with one of zinc; the alloy will be found to be the common brass.

Dissolve filings of copper in hot sulphuric acid, and afterwards evaporate the acid, and beautiful crystals of common blue vitrol will be formed.

Dissolve some of the crystals, of the last experiment, in water, and dip therein a knife blade, or any clean pice of iron, and it will be instantly coated with reduced copper.

(To be continued.)

Science of Mechanics.

(Continued from No. 22.)

A boat or float in the form of an eliptic spindle, 32 feet in length, and 16 inches in diameter, will contain about 10 cubic feet; its buoyancy would be from 600 to 800 lbs., and its entire surface about 70 square feet. Of course 10 cubic feet of water must be displaced, and returned to place, during each 16 feet of the progress of the boat. The greatest extent of motion to which any part of this water is thus subjected, is eight inches; but as only a part of it is subjected to such a motion, we shall allow the average motion to be six inches. Then ten cubic feet of water must be removed an average distance of six inches in one second of time, provided the velocity of the boat is 16 feet per second. It has been before demonstrated, that to put any pondrous body in motion with a velocity of 16 feet per second, requires an exertion of power equal to raising an equal weight a vertical distance of four feet. The weight of 10 cubic feet of water being 600 lbs., to give it a velocity of 8 feet per second, would require an exertion of power equal to raising it vertically one foot. A velocity of four feet per second would require power equal to raising it vertically three inches. A velocity of two feet per second would require power equal to raising it three fourths of an inch. One foot per second velocity will require an exertion equal to three sixteenth of an inch elevation. But as the required motion is only six inches per second, the requisite exertion will be equal only to raising its weight three sixty fourths, or less than one twentieth of an inch. Now then, in order to ascertain the requisite continuous propelling force, we must find the force that bears the same proportion to the weight of the displaced water, that three sixty fourths of an inch does to four feet; thus theory gives about ten ounces as the requisite continuous force; and if the surface is *perfectly* polished, this calculation might be tolerably correct. However, as no means have yet been found for producing a perfect surface, allowance must be made for friction produced by the roughness of the surface, which may be expected to increase the resistance from 1 to 10lb., according to the state of the surface. The atmorpheric resistance is evaded in a much greater proportion by the eliptic spindle form, than the aqueous, for the reason that atmospheric pressure is so much greater in proportion to its gravity, than that of water, that under any reasonable travelling velocity, the pressure on all parts of the surface will be nearly uniform; the advantage derived from the pressure of the returning air on the after part of the figure, nearly equalling the resistance of pressure on the forward part. Hence arises the confidence by many entertained in the practicability of propelling an eliptic spindle balloon with great velocity, by a comparatively trifling application of power.

To be continued.

AN IMPORTANT INVENTION.—We have intimated in a late number, that we were apprised of the progress of an invention calculated to stop the motion of a railroad train as suddenly as the conductor may desire, and that by a new application of power to the rails, independently of the wheels of the car. We are now permitted to announce that we shall present an engraving, with a full description of the said improvement, in our next number.

PAINTING IN COLD WEATHER.—We see it stated in forty of our exchanges that "paint applied between November and March, will last twice as long as that which is spread in the warmest weather." This is not the fact, however, notwithstanding the multitude of witnesses. There is truly a disadvantage in applying paint to boards while they are heated by the sun; but a still greater injury is sustained if a storm of snow or rain falls on the paint before it becomes dry. May is one of the best months for painting.

Arched Bridges.

FIG. 1.

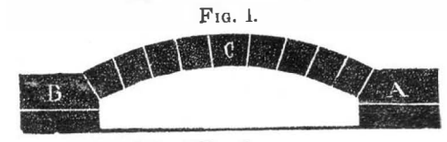
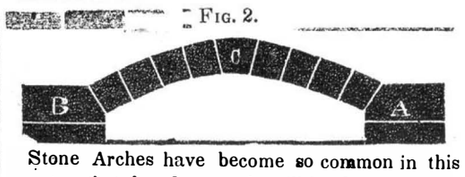
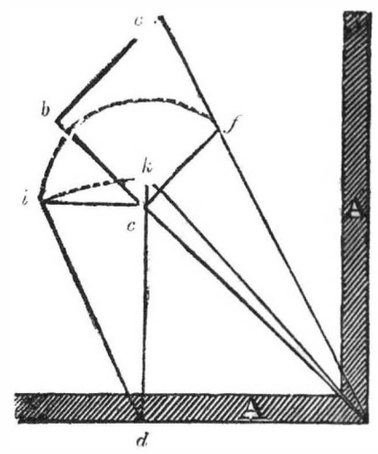


FIG. 2.



Stone Arches have become so common in this country, that but few people will be found who do not know something of the principle on which they are supported, or rather, support themselves: yet to a person who had never seen a stone or brick arch, such a thing would appear very mysterious and he would not be readily able to comprehend the principle by which the key stone and other central parts are sustained, and enabled to support such an immense additional weight. The usual and almost universal form of stone arches, is that of a regular curve, from one abutment or foundation to the other as in fig. 1. in which A, and B, are the abutments, and C, the key stone. If these abutments are firm, the strength of an arch of this construction is incalculable, for it cannot be broken down by weight, unless the weight is sufficient to *crush* the stone of which the arch is composed unless the curve of the arch is so bold that a line drawn direct from the top of the key stone to the angle formed by the junction of the arch and abutment, would pass within the interior surface. Nevertheless it is evident that a regular curve is not the most judicious form for an arch, in which the greatest quantity of strength is required in proportion to the quantity of stone employed in its construction. Of an arch of this form, the centre part is the weakest, and cannot sustain so much weight or pressure as other parts between that and the abutments; and this difference is partly accounted for by the fact that the seams, and side surfaces of the stones near the centre, are more vertical, and in the direction of the force of gravity; while those nearer the abutments are more oblique, and consequently the weight sustained by those parts of the arch, presses more directly on the abutments. A more judicious form in this respect, is an irregular curve, like that represented in figure 2, in which the curve is sharper about the key stone, than at any point between that and the abutments. The direction of the upper surface of the arch, may commence from the abutment in nearly a straight line, but gradually curving more and more till it approaches the centre. In this model the strength of different parts of the arch, will be more equal and uniform; and the span of this arch may be extended farther in proportion to the size of the stones of which it is constructed. Another consideration in favor of this form for arches, is that when a heavy weight is sustained by the centre, the pressure thereby occasioned on the several stones composing the arch, becomes more uniform on different parts of the contact surfaces, than in the regularly curved arch; yet there will be no deficiency of strength near the ends of the arch, because the leverage being less, a greater weight would be required to crush the stones employed in its construction.

Scientific Rule for Carpenters.



To find the bevels to cut the end of a Jack Rafter so as to fit against the Hip Rafter; let A A, represent two walls of a building— let *a b*, represent the position of the Hip Rafter, and *d e*, the position of a Jack Rafter. Draw *b c*, at right angles to *a b*; make *b c*, equal to the pitch of the roof; join *a c*, which is the length of the hip: then draw *e f*, at right angles to *a b*, also *e i* at right angles to *d e*; make *e i*, equal to *e f*; join *i d* and the angle *d i e*, is the bevel for the vertical sides of the Jack Rafter; produce *d e* to *k*; make *d k*, equal to *d i*; join *k a*, and the angle *d k a*, is the bevel for the upper and lower sides of the Jack Rafter.

TREMENDOUS CONFLAGRATION.—A St. Petersburg paper gives an account of a fire which occurred in Tobolsk, in September last, which extended to the distance of 150 miles, and near fifty miles in breadth. Eleven villages were attacked in its course, and one was entirely destroyed. In the space of thirteen miles, there were burned 1500 houses 1,850 barns, 77,800 ricks of hay, 665 horses, and 900 head of cattle. Many persons perished by the fire and smoke thereof.

MORE BIG BONES.—The past year has been remarkable for the discovery of gigantic relics of men and animals of former ages. We have discussed the subject of the monstrous missourium, hydrargos, and the eighteen-feet giant, and are now assured that there have been recently discovered in New Zealand, the organic remains of monstrous birds, which must have been at least seventeen feet in height while standing, and of course much higher than that when on the wing. The bones appear well proportioned for strength, and might have been capable of transporting men through the air, though there remains no evidence of their having been subject to the bridle bit, whip or spur.

The Art of Painting.

(Continued from No. 22.)

LANDSCAPE PAINTING ON WALLS.—In a former number we directed that the walls above the horizon line should be painted with a sky-blue, composed of white and celestial blue. It may be here remarked, however, that *mineral blue*, makes a more perfect imitation of the sky than any other, though more enpensive than either celestial or slip-blue. But it sometimes may occur, when the walls are new and not thoroughly dry, that no other blue than indigo (finely ground,) will stand firm and unaffected by the fresh lime of the walls. Having represented the rising clouds as before directed, add a little blue-black (a mixture of two parts blue to one of black) to the sky blue, so as to deepen the color one or two shades from sky blue, and with it paint such parts as are designed for water, drawing the surface of the open ocean, carefully to the horizon line. Paint the most distant mountains, capes, and highlands—those of the fifth distance,—with sky-blue, and at the same time shade them slightly on the side opposite the principal light of the room, with *blue shade* (a mixture of blue and white with a slight tinge of rose-pink) carefully blending the same with the sky blue, while free or moist. The bases of the mountains may be also shaded; and the tops of the mountains on the sides towards the light may be heightened with white or pale pink color. Paint the grounds, capes, islands and high lands of the fourth distance, with *distant green*, (a compound of about twelve parts of sky blue to one of chrome green) shade them with *blue shade* and heighten them with *sulphur yellow*, (a mixture of six parts white to one of chrome yellow.) We may here observe that for the more convenient execution of this important part of the work, some peculiar tools are required, which can not be procured ready made and prepared; wherefore we here give a description thereof. A common sash brush, about half an inch in diameter, is so flattened that the end thereof is reduced nearly to a sharp edge, by having a small piece of wood, one inch long, lashed to each side of the brush with twine, as here represented.

A few brushes thus prepared are indispensible in painting, shading, and heightening the distant hills, capes, and islands, as well as the trees and rocks of the first distance, and are designated by the name of *cutting* brushes. Another kind, a size larger, and not made so thin, but reduced to about a quarter of an inch in thickness at the end, is termed a *bushing* brush, and is generally used in the formation of the tops of trees in the third and fourth distances. Another yet larger kind of brushes are similarly flattened, and denominated shading brushes, and are generally employed in applying and shading the various ground colors in the first and second distances. The ground color for the second and third distances generally consists of forest green (a mixture of equal quantities of chrome-green and white) occasionally reduced with sky blue. The hills and swells of land are shaded with blue-black, and heightened with lemon yellow (chrome yellow and white, equal) or Paris green. Venitian red or yellow ochre, are also occasionaly blended with the ground color of the second distance. We have several times mentioned the use of chrome-green, which is a common color at the shops; but a mixture of bright lemon-colored chrome yellow with slip blue, is both cheaper and brighter, than the ordinary chrome green. There is another cheap color called the Bruswick green, which is preferable to either for the second distance ground; but as worthless compounds are often sold under this name, it requires some knowledge of colors in selecting it. The first distance, or foreground is first painted with chrome green, sharply heightened with lemon yellow and Paris green; or painted with burnt umber and heightened with horizon red; in either case, deeply shaded with black.

To be continued.

HEART-RENDING CALAMITY.—On the morning of the 10th ult. about 5 o'clock, the house of Hon. Marshall W. Strong, of Racine, Wis., was consumed, and Mrs. Strong and her two children perished in the flames. Mr. Strong was absent on his official business as counsellor in the Legislature at Madison. Mrs. Strong was awakened by the fire and smoke, and with a servant girl who slept in another apartment, rushed into the street; but the impulse of self-preservation being instantiy overpowered by the natural affections of the mother, the lady rushed into the midst of the smoke and flames with the frantic intent of saving her children, and perished with them.

DIDN'T SHE MISS IT?—An exchange paper says that when the present King of the French was teaching in Philadelphia he fell in love with a Miss P., the daughter of a wealthy citizen. The lady was favorable to his advances but was overruled by the authority of her father, who declared that his daughter should not bemean herself by marrying a schoolmaster.

A NEW CITY.—The new manufacturing enterprise, near the Andover Bridge, Mass., is exciting much attention. The Atlantic Cotton Mills Company, which has just been incorporated, with a capital of $2,000,000, will commence immediately the erection of four or five large mills; and the Bay State Woollen Company, with $1,000,000, will immediately erect two large woollen factories.

A SLEIGH BOAT.—A large company of people from Bath Me., recently made a mammoth sleigh excursion to Portland, and among them, a large boat, mounted on runners, and well manned by jolly sons of Neptune in full rig They had a merry time.

A WIDOW'S MIGHT.—A man has recently entered a complaint against a widow lady in Buffalo, for slapping his jaws, and otherwise maltreating him. Poor fellow.

VARIETY

Mr. J. K. Hitchcock, a mechanic of Baltimore, having been recently presented with three twin daughters, has named them Mary Florida, Martha Texas and Jane Oregon? no, Jane Polk, but should have been Oregon.

A lodge of Odd Fellows in Bridgewater Mass., have passed a resolution, restricting its members from the practice of profane language. Should they restrain all other vices, they would be still more *odd*.

Professor Liebig (a bad name, by the way) estimates that common wood ashes are worth fifty cents per bushel to spread on land. If that was known to be a fact, there would be a great rise in soap.

"Set a knave to catch a knave," is an old and popular adage; but the Baffalo people have not succeeded very well with the experiment of appointing the principal rowdies and scamps of the city for watchmen.

A strange and extraordinary animal, of a dark brindle color, nearly seven feet long and three feet high, has been killed by some hunters in Ohio, after a chase of 150 miles.

The following villainous toast was drank at a recent jollification of crusty old bachelors in Indiana: "The Fair sex,—angels in ball-rooms, saints churches, and devils in the kitchen.

A German and his wife lately arrived at Galina, pretending to be very poor, and dependent on charity; but were subsequently discovered to possess $1,700 in cash, concealed in a box.

An Iron Company, at Providence R. I., have commenced the manufacture of railroad iron on a large scale. They have the contract for supplying the Providence and Worcester Railroad.

The Cherokees have sent a delegation to examine the wild lands of Texas, with the view of making arrangements with the government for permission to settle there.

Some ladies of Boston have formed a charitable shoe-society, for the purpose of supplying indigent children with comfortable shoes. It takes the ladies to care for the children.

It is estimated that the cost of tea annually consumed in the United States, is nearly $4,000,000. This looks unfavorable to the cause of *tea*-totality in this country.

The Picayune mentions the exploit of a man, who, being out on a night-hunt lately, shot a *mail-coach*, supposing the two lamps to be the fiery eyes of some strange monster.

Sir Wm. Burnett of England, is said to have discovered a method of impregnating wood with the muriate of zinc, which renders the wood as durable as iron.

A marble quarry has been discovered in the town of Florida, Mass., which produces perfect surpentine marble, capable of receiving an excellent polish, and equal to the best.

Splendid preparations are in progress, for the visit of Queen Victoria to the palace of Louis Philippe, some time next summer. It may be an *August* event.

Two new steamboats have been recently lost on their first voyage down the Mississippi, by running on snags. When will Congress attend to the subject of clearing that river?

Twenty thousand *Valentines* are supposed to have passed through the Despatch and Post Offices in this city on Saturday. One hundred extra carriers were employed on the occasion.

A Cotemporary says there is a man in Fulton st. who fancies himself an *umbrella*, and runs home when it begins to rain, lest somebody should borrow him.

The True Wesleyan says: "It is a singular fact, which has been strangely overlooked, that the words *Ham*, *Shem*, and *Japheth*, mean in the original Hebrew, Black, Red and White.

The splendid Oregon and gay Knickerbocker are to be placed on the Stonington line for the coming season. This will ensure pleasant trips to Boston.

Crocker & Brothers, of Taunton, Mass., have made arrangements for the manufacture of Muntz's Patent Yellow Metal, for sheathing vessels.

Somebody says that there are more lies told in the brief sentence "I am glad to see you," than in any other single sentence in the English language.

Of the nine thousand bridegrooms in Massachusetts, within the last year, nearly thirty of them were under twenty years of age.

There is said to have been fifteen hundred applicants for offices in the two new regiments, which Congress has decided to raise in anticipation of war.

The famous danseuse Elssler is kicking up in the city of Rome, to the tune of six thousand dollars for twelve evenings at the Argentine Theatre.

A concert was recently given at the B. W. Tabernacle in this city, in which fifteen hundred children sung together, in excellent time.

A toper, who becomes so rum-crazy, that he fancies trees to be men, is said to have the delirium *tree-mens*.

The receipts on the Western Railroad for the week, ending Jan. 31st, were $14,499, being 1,750 more than for the corresponding week in 1844.

EPITAPH.

Here lies the body of W. W.
Who never more will trouble you, trouble you.

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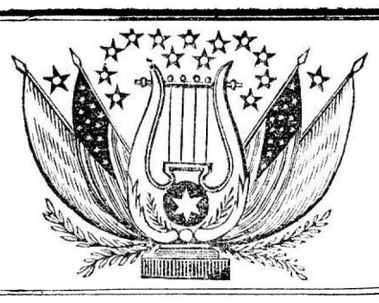


American Girl's Song.

Our hearts are with our native land,
Our song is for her glory;
Her warrior's wreath is in our hand,
Our lips breathe out her story,
Her lofty hills and valleys green,
Are shining bright before us—
And like a rainbow sign is seen
Her proud flag waving o'er us.

And there are smiles upon our lips,
For those who meet the freemen—
For glory's star knows no eclipse,
When smiled upon by women.
For those who brave the mighty deep,
And scorn the threat of danger,
We've smiles to cheer, and tears to weep
For every ocean ranger.

Our hearts are with our native land,
Our song is for her freedom;
Our prayer is for her gallant band,
Who strike where honor leads them.
We love the taintless air we breathe—
'Tis freedom's endless bower;
We'll twine for him an endless wreath,
Who scorns a tyrant's power.

They tell of France's beauties rare—
Of Italy's proud daughters;
Of Scotland's lassies, England's fair,
And nymphs of Shannon's waters.
We need not boast their haughty charms,
Though Lords around them hover;
Our glory lies in Freedom's arms—
A Freeman for a Lover!

Sparkling and Bright.

Sparkling and bright, in winter's night,
Does the fireside kindly cheer us,
And welcome word from friend is heard
Like a spirit whisp'ring near us.

Then sing to-night, with hearts as light,
To love as gay and fleeting,
As bubbles that swim on the whirpool's brim,
And break to the breeze when meeting.

O, if mirth might arrest the flight
Of Time through life's dominions,
We here a while, would now beguile
The greybeard of his pinions.

But since delight, can't stop the wight,
Nor fond regret delay him,
Nor Love himself can hold the elf,
Nor Sober Friendship stay him.

From the Baltimore Saturday Visiter.

The Great.

Who are the great? The great are they
With hearts from pride and envy free—
Who ne'er unholy power obey.
Or bow to wealth the suppliant knee.

Who covet not the applause of men—
Are happy in an humble sphere—
And never with the lips or pen
Debase the heart or pain the ear.

If called to rule, no selfish aim
Prompts them to stand in honor's seat;
True glories cluster round their name,
While grateful hearts their worth repeat.

Speak it Boldly.

Be thou like the first apostles—
Be thou like heroic Paul:
If a free thought seeks expression,
Speak it boldly!—SPEAK IT ALL!
Face thine enemies—accusers,
Scorn the prison, rack, or rod!
And if thou hast the TRUTH to utter,
SPEAK! and leave the rest to GOD.

The Strongest.

Once on a time, a certain ancient king,
Required to know what was the strongest thing:
One said it was a king—another, wine,
A third, that it was woman, all divine;
But, women, wine, or kings, the fourth declared,
With simple Truth was not to be compared.

QUAINT NAMES.—We need not look further from home than Connecticut, to find names which would sound as comical to a stranger's ear as are found at the South or west. For example, the Norwich Reporter, in giving a list of the towns in which that paper circulates, mentions the names of Bear Hill, Rice City, Liberty Hill, Moosaup, Willimantic, Noank, Bozrah, Up Town, Poquetonok, Scotland and Killinglv.

AN INCENDIARY DETECTED.—The Bangor Whig states that a vile incendiary set fire to a confectionary shop, on Sunday last, and when detected, was quietly sitting by the side of the fire, which had already burned through the floor. His name is "wooden peck measure," a fellow that had been employed in the ashes business.

WOE TO WINE DRINKERS.—One of our city chemists, not long since, analyzed a bottle of what purported to be pure *champaigne*, and found it to contain one quarter of an ounce of sugar of lead. Of course if any person had drank the wine, they would have secured the *pain* without any *sham*.

VERY POLITE.—The hogs of a neighboring city, are *respectfully requested*, by one of the dailies, to restrict themselves to the carriage ways, and not intrude themselves amongst the gentry on the side walks, especially on rainy days.

CAPITAL PUNISHMENT IN R. I.—The Legislature of Rhode Island has refused, by a vote of 53 to 9, to abolish capital punishment in that state. As an offset, however, we learn that three-fourths of the towns have abolished the traffic in intoxicating liquors.

The Credit System.

It has been truly and judiciously remarked, that under the present ordinary banking system, no person can obtain the least accommodation in money loans, unless he is in such circumstances, as to have no necessity for such loans; first, because he is not known at the banks; and secondly, because the banks will not take the trouble to loan money in small sums, nor to investigate such security as he is able to offer. Under these circumstances, if a mechanic, who is in fair business, and holds property worth $600 or a $1000, has occasion for $50 for a few days, while waiting for some rich customer to pay his bill, his only resource is to go and solicit the aid of some acquaintance who is better known, and perhaps give a mortgage on property worth $500 as security in order to obtain his endorsement on a promissory note of $60. He then must apply to a banker, to *do the note*, and after a delay of from three days to three weeks, obtains $45, or 75 per cent on the note which has but 75 days to run. For such, and divers other inconveniences, the Credit System of Mr. Golder, a copy of the patent of which, we insert in another column, is calculated to prove a general remedy, and furnish to the working man the ready facilities of loans in small sums, without the sacrifice of time and discount, to which he is subject under the ordinary banking and broker's system. A bank has been recently established at Cincinnati, which lends money to the working class, in sums from $10 to a $100 for a single day or longer, either on endorsed notes of hand, or other collateral security; but on a plan entirely different, and vastly more liberal and accommodating than the pawnbroker's system. We learn that an association is being formed for introducing Mr. Golder's Credit System in this city; and whether his plan is adopted and brought into operation or not, we felt certain that in a very few weeks, there will be some arrangement established that will accomodate the working men, and supercede the present outrageous system of shaving. We shall allude to this subject frequently.

J B Gough and his Accusers.

The celebrity of Mr. Gough as a Temperance Lecturer, as also his misfortune which occurred in this city some months since, are probably well known to all our readers, though we have hitherto said but little on the subject. We believe it is evident to the mind of every candid man in this section, that Mr. Gough was decoyed by a pre-planned stratagem, to a shop near the office of the Police Gazette, and induced by professed friendship to drink a glass of soda, in which was concealed a poisonous drug, which produced a degree of insanity, accompanied by a craving appetite for stimulants, by which he was overcome and induced to drink several glasses of brandy, &c. The Police Gazette, whose publishers make it a business to report, if not exaggerate the faults of others, being evidently opposed to the temperance reform, on the ground that it injures their business by preventing crime, was among the first to publish the fall of the champion, and to refute the palliating evidence in his favor. During these efforts, one come to their aid, whose character has since been shewn up in no enviable light. His name is Goodhue, said to be a *temperance lecturer* from Norwich; and in an article headed "The Liar's Doom," and published in said paper, he made several assertions purporting to be "plain statements of facts," but which have been subsequently proved to be utterly destitute of truth. And moreover the said Goodhue, has been proved, by sundry statements published with reputable names appended, to have been known as a habitual if not a notorious liar, prior to his futile attempt to injure the character of one, whose reputation for honesty of principle, stands unblemished. We do not suspect that Goodhue was the person who induced Mr. Gough to drink the drugged soda, nor that the "Police Gazette" publishers were concerned in the affair, although we have thus far discovered no substantial evidence to the contrary. Mr. Gough enjoys at present the confidence and respect of a large portion of the community, and we hope he will have learned prudence by his experience, and be more cautious of pretended friends in future.

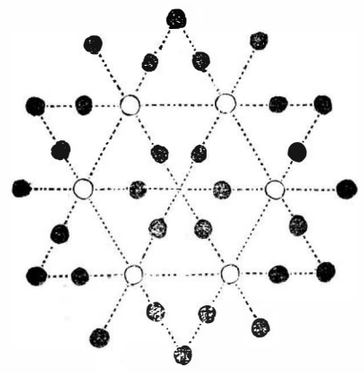
A GREAT STORY.—A wonderful item is passing the rounds, purporting to be an extract of a letter from Shiraz, and relating that a caravan of asses laden with gunpowder had just arrived at that place, and in passing a blacksmith's shop, the powder was ignited by a spark from a forge, producing an explosion by which all the asses,—72 in number, and all the men, save one, of the caravan, together with several of the inhabitants, were instantly *consumed to ashes;* one man only escaping, and he badly burnt. The account is accompanied with many details, to give it the appearance of plausibility; yet the probability is that it is altogether a sheer fabrication.

A WESTERN DEMONIAC.—The Natchitoches Chronicle states that John McDurmid, of Sabine Parish, lately beat and burned his own child of three years old, till it was almost dead, and then broke the ice in a horse trough and plunged the child in. Finding the child dead, he mounted his horse and made his escape: that is, he escaped from the *place*, but did he escape from punishment? No, that is impossible.

LECTURE FOR CARPENTERS.—Mr. Wm. A. Davis will deliver a course of lectures on the subjects of Stair Casing and Hand Railing, at 68 Spring st., on the evening of February 18th, 25th, and March 4th. Tickets for the course, 75 cents; single tickets 25 cents, to be had at Huyler's bookstore corner of Bleecker and Downing st., Hill's Tool store, 397 Broadway; J. Weed's Hardware store, 96 Division street, and at the door.

LOSS OF CHARACTER.—We learn from the "Boston Mail," that Bennett of the Herald, has sued Major Noah for various libels, and laid his damages at $10,000,000. He must be extremely destitute of character now, if he has suffered the loss of it to that extent.

ANSWERS TO THE ORCHARD PUZZLE.—We have received three correct answers to this problem, all of which are essentially the same, though slightly varying in the arrangement. They are from J. C. W., and L. A. G. of Springfield Mass., and J. B. E. P. of Norwich Ct. The answer of J. P. is essentially correct, but lacks regularity. The plan below is perfect. It is most likely we shall receive more answers, but not in season to be noticed in this number: in fact, only one has been received in season to procure an engraving thereof, as our paper goes to press on Tuesday evening. We doubt whether we shall readily find a puzzle so 'cute but that some Yankee will be found 'cute enough to answer it. We *may* give some of the variations of answers on a small scale in our next.



Jumble.

General J. P. Henderson has been elected governor of the State of Texas.—Tennessee is going into manufacturing. In Lawrence county they have five factories.—A bill abolishing capital punishment has passed the lower branch of the Indiana Legislature.—The steamboats, running from New Orleans to Galveston are said to be reaping the most enormous profits.—The wife, of a poor weaver, in Clayton Eng., only nineteen years of age, in little more than three years has presented her husband with seven children.—In the time of the Emperor Justinian, silk bore so high a price, that it was sold for its weight of gold.—A ninepin alley, at Springfield, was lately robbed of the balls and pins, much to the chagrin of the loafers.—No less than three hundred emigrants from the States recently crossed the Brazos, at Washington ferry, in one day.—It is said that a single leaf of the Talipot tree, which flourishes in the East Indies, will shelter ten men from the sun or rain.—A boat that recently arrived at Cincinnati, passed eighty two steamers, on their way down the Mississippi.—A boy has received two thousand dollars reward offered by the city of Boston for the detection of incendiaries.—The value of produce and merchandize passing through the Erie Canal last year, was upwards of forty five millions of dollars.—In March, 1845, there were in this city 935 Smiths, and 132 John Smiths.—A new liberty party paper is about to be started at Pittsfield.—Over 1,000 negroes are in connection with the Methodist church in Texas.—Three boys have been arrested in Philadelphia, for peddling obscene books in the streets.—Ephraim says that a man without a wife is like a bird with only one wing.

FEMALE COURAGE AND RESCUE.—The French papers give an interesting account of three young girls, who were walking in the fields near Lyons when the oldest of them, being at some distance from the others, was seized by a wealthy, robust man, and hurried into a forest. The two sisters ran to her, and one struck the scoundrel on the head with a large stone, which she had taken from the ground, which killed him on the spot, at the moment when the resisting strength of the elder sister was giving way. The affair was investigated by the authorities, and the girls were exhonerated.

FRENCH HUMBUG.—The French journals are making themselves ridiculous on the subject of a great invention by the Baron de Liebhaber of Paris in the art of blasting. The invention consists in enlarging the bottom of a hole drilled in stone, by pouring in muriatic acid; and after a slow and tedious process, requiring probably as much time as would be sufficient for a Yankee to make half a dozen ordinary blasts, the charge is adjusted, and the blast is quite as affective as it would have been by the usual method of *tamping*. Barons can do great things.

WATER RUNNING UP HILL.—Dr. Smith in a recent lecture on Geology, proved conclusively in theory, that the mouth of the Mississippi River, is three or four miles higher or farther from the centre of the globe, than its source; and the current of the river, from North to South, is produced by the centrifugal force, occasioned by the rotary motion of the earth. This theory appears plausible, but it is of little consequence to us in any way.

CHAIN BARRIERS.—There has been some talk of extending heavy chains across the entrances of our harbors, to prevent the ingress of our enemies' ships; but a chain of the heaviest kind, having been extended across the river at Parana, prior to the recent attack of the English Squadron on the ports of that place; Capt. Hale, of the steamer Firebrand, approached the chain, hooked it up with a cat-block, hauled it up to the cat-head, and cut off the chain in less than ten minutes, in the midst of a heavy fire from the ports.

A GREAT CRASH. A large shot tower in Philadelphia, 180 feet high, has been recently taken down by contract. The contractor finding the process of taking off the bricks by hand, to be rather slow, applied a blast of powder, when the whole tower came down with a tremendous crash, producing a dense cloud of dust, which slowly moved off with the current of the atmosphere.

A TALL SHOP.—The Phoenix Shot Tower of Baltimore is 220 feet high, 50 feet diameter at the base, and 20 feet at the apex. 300 tons of shot of various sizes are made at this tower per annum.

Additional Notices.

[The following liberal notices of "the Pastoral Life and Manufactures of the Ancients," should have been inserted last week, but were omitted for want of space.]

It is pleasant to turn away from the history of wars, which spread desolation over the earth, to that of the arts of peace, which give to men wealth and happiness, and convert the rugged earth into a paradise. The first division of this work is devoted to the consideration of Silk, its history and cultivation among the ancients, and the Chinese in particular; the second part treats of the Origin and Ancient History of the Sheep, which involves much of the pastoral life of the ancients, and furnishes many illustrations of the Scriptures; the third treats of the Ancient History of the Cotton manufacture, its great antiquity in India, and the unrivalled skill of the Indian weaver, &c.; the fourth treats of the Linen manufacture, Flax, Hemp, Asbestos, &c. It is a truly valuable work, and shows great research.—*Boston Trumpet.*

A most remarkable and excellent work, calculated to incite inquiry by others, and highly interesting to manufacturers, as going to show in the most captivating form, the primitive history of their now much advanced manipulations—who is there that is practically acquainted with the various manufacturing operations, as they exist, that does not desire to know their origin, to learn from what simple beginnings the present complex arrangements have been devised to compress so much for the comfort and convenience of mankind. Not only is a lesson taught in this volume, but new appliances may again originate in minds whose power is devoted mainly to the contemplation of such matters in their daily avocations, and it is for this reason, we would recommend this useful work to the perusal of our Manufacturers and Artizans.

We are much mistaken if the reader does not rise from its pages with thankfulness for this short paragraph if it should have any influence in leading him to own the book. The author asks nothing from the public, it is anonymous, published by the Harpers in their best style, handsomly bound and illustrated with engravings, and altogether an American production, worthy of the highest praise to all who have been engaged in presenting it to the public.—*Passaic Guardian.*

Golder's Patent Credit System.

The United States of America to all whom these Letters Patents shall come,—

Whereas John Golder, a citizen of the United States, hath alleged that he has invented a new and useful improvement in the art of Public Finance, in loaning and actually employing credit, which improvement he states has not been known or used before his application,—hath made oath that he does verily believe that he is the true inventor or discoverer of the said improvement—hath paid into the Treasury of the United States the sum of thirty dollars—delivered a receipt for the same, and presented a petition to the Secretary of State, signifying a desire of obtaining an extensive property in the said improvement, and praying that a Patent may be granted for that purpose. These are, therefore, to grant according to law to the said John Golder, his heirs, administrators or assigns for the term of fourteen years from the twenty-sixth day of September 1835, the full and exclusive right and liberty of making, constructing, using and vending to others to be used, the said improvement, a description whereof is given in the words of the said John Golder himself, in the Schedule hereto annexed, and is made a part of these presents.

In testimony whereof I have caused these letters to be made Patent and the Seal of the United States to be hereto affixed. Given under my hand at the City of Washington this twenty-sixth day of Sept. 1835, and of the Independence of the United State, of America, the Sixtieth. ANDREW JACKSON.

By the President, John Forsyth, Secretary of State.

City of Washington, to wit: I do hereby certify that the foregoing letters patent were delivered to me on the 28th of Sept., 1835, to be examined: that I have examined the same and find them conformable to law—and I do hereby return the same to the Secretary of State within fifteen days from the date aforesaid, to wit, on the second day of October in the year aforesaid. B. F. BUTLER,

Attorney General of the United States.

The Schedule referred to in these letters patents, and making a part of the same, containing a description in the words of the said John Golder himself, of his improvement in the art of Public Finance, in loaning and actually employing credit.

To all whom these presents shall come,—Be it known that I, John Golder, of the City of Philadelphia and State of Pennsylvania, have discovered, invented, and formed a new and valuable accumulative or interest, bearing check or credit chart, based upon a new principle in monetary negotiations, and to be used as a useful improvement in the art of Finance, to be used only in the negotiation of loans upon contract with actual capitalists, or in the guarantee or transfer of bona fide deposits and investments to be made, a full and exact description of which impress and drawing thereof, as invented and written by me, and hereafter is designed to be nsed as aforesaid, only the names, sums, dates and vignets, which are at all times to be written, and filled up in the own proper hand writing of the person or persons, conformable to the contracts made, or to be made, with the party or parties contracting therefor, is hereunto annexed, and the inventor and and author claims as his invention not only the design and writing of the chart or check above described, and attached hereto, according to the specific form and definite advantages of creating and sustaining credit upon its peculiar solid principle of accumulative action, and the right and privilege of using it as an improvement in negotiation of loans and investments of capital upon permanent visible security, but also the operative principle upon which it is based, in the combination of capital, bona fide secured, which will admit of numerous variations, in the form and manner of wording or constructing the same, whilst the principle upon which it is intended to operate will remain substantially the same, and would be, therefore, necessarily considered as an evasion of my right.

JNO. GOLDER.

Witness:—Thos. P. Jones, Robt. Mills.

THE ILLUSTRATED BOTANY, FOR MARCH.—Ah, this is the beauty-queen of modern monthlies, thus far. We have been an admirer of the beauties of Flora, but little expected to find them in such perfection among the *leaves* of a book. Four beautifully colored engravings, representing the Moss Rose, Japan Fire, Passion Flower, and Forget-me-not, will richly pay for the price of the number, to say nothing of sixteen pages of useful reading matter. It is published by Wellman, 118 Nassau street, for $3 per annum.

LEARNING AMONG THE CHEROKEES.—The Cherokee advocate states that among the many who have visited that office since its first establishment, there have been but two who could not read. There is a proportionably larger number of Cherokees who can read, than is found among the white people in some of the Southern States.

Implicit Obedience.

Being closely limited with regard to both time and space, when the article under this head, in our last number was written, that we could not give such definite and explicit illustration thereof, as the subject requires, and prevent the cavilling of those who are inveterably opposed to all the true life principles of christianity, on account of the *cross* therewith inseparably connected. We venture the assertion that there is not one person on earth, who, honestly reading the Scriptures, for the sake of learning the true path of duty, and way of salvation, who would understand them in the manner in which they are construed by the ease-and-honor-lovin churches—even those which make the loudest professions of "experimental religion," "divine influence," "the new birth," &c. And the only plea which men can now find for understanding the Scriptures of truth widely different from the plain ostensible import of the words thereof, is that the learned clergy thus construe them: while it is perfectly plain, and will not be denied, that by these modern constructions, the *self denying* and *crossing* peculiarities of the gospel, are almost entirely evaded. But still the brilliant word remains, in letters of burning fire, "He that will be a friend of the world, is the enemy of God." "That which is highly esteemed among men, is abomination in the sight of God." "Wo unto you when all men shall speak well of you," &c. It is vain to adduce the plea that the true sense of the Scriptures is rendered obscure in our translation thereof; for the Divine Autor of the Scriptures, is also the author, in the course of His divine providence, of all the diversity of language, and could as plainly see what forms of expression would be required by Americans in this age, as by the Jews 1800 years ago. Any other view, would at once admit the supposition, utterly at variance with the tenor of the gospel, that He had placed the poor and humble believers in a situation to depend wholly on the rich, noble and wise of this world, for the glorious light of truth. But this is not the case; the most important instructions of the gospel, with regard to the duty of man, and the true way to obtain an inheritance in the eternal Kingdom of glory, are given in the most plain and simple language, easy to be understood by the sincere: while those who love the honor of reputation and respectability among men, and wealth of this world, are thereby so blinded that they can not, or will not receive such truth; as it is written "How can ye believe, which receive honor one of another, and seek not the honor which cometh from God only?" The injunctions of Christ and his apostles—the "commandments" of Christ, must be implicitly obeyed; and whoever sets his heart to obey them, will infallibly be blessed with the divine favor, the "unspeakable joy" of hope, even the joyful blessings of the "manifestations" of the Son of God, as he has said (John 14, 2.) "He that hath my commandments, and keepeth them, he it is that loveth me, and he that loveth me shall be loved of my Father, and I will love him, and manifest myself unto him; and (ver- 17) "He dwelleth with you, and shall be in you: I will not leave you comfortless; I will come unto you." (We would admonish the reader to read each verse and line of this chapter, with studious attention.) Is there anything in the entire Bible more clear, plain and evident, than that those who would be saved by the merits of the glorious Son, are to obey his commandments implicitly, according to the word and letter thereof. But the pretensions of the Hindoo priests, that Juggernaut blesses the people when his ear moves forward, are not more palpably absurd, than the substitution of modern church requisitions, the formality of popular praying, preaching and singing, and periodical professions of experience, with displays of Methodical excitement, for simple implicit obedience to the gospel. We would not be understood by any remarks on this subject, to represent that it is the duty of any man to waste his property, or to neglect diligence in business; nor that it is to be anticipated that all men will obey the gospel; for this is contrary to Scripture prophecy, and consequently impossible. But we would earnestly admonish all those who desire the love of God above all things else—who have so high a regard for the *Kingdom of eternal glory*, that all things of this world sink into insignificance in comparison—to study the gospel dilligently and obey implicitly; be dilligent in business, not for the purpose of rendering themselves independent of divine Providence by the acqusition of wealth, nor for the purpose of conforming to the fashions, customs and style of this world; but that "they may have to give to him that needheth:" for according to the Scriptures the love of God dwelleth not in one who having the wealth of this world, neglects or refuses to impart the same to those who are poor and have need. The repeated and confirmed commandment, "Love thy neighbor as thyself," has a special allusion to the dispensation of temporal benefits, and the term, "neighbor," is not to be restricted to any favorite sect, class or color. But whoever flattereth his own soul with hopes of salvation, while neglecting to "take up his cross," and obey the Gospel commandments, only deceiveth himself, and might as well abandon his hopes altogether.

THE SAVIOR'S PRAYERS.—He sought solitude, he shrunk from observation, in fact almost the only enjoyment which he seemed really to love, was his lonely ramble at midnight for rest and prayer. He spent whole nights thus, we are told. And it is not surprising, that after the heated crowds and exhausting labors of the day, he should love to retire to silence and seclusion, and to enjoy the cold and balmy air, the refreshing stillness, and all the beauties and glories of midnight, among the solitude of the Gallilean hills; to find there happy communion with his Father, and to gather fresh strength for the labors and trials that yet remained.—*Selected.*

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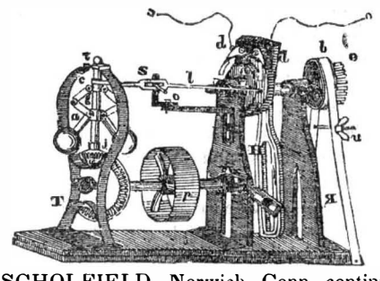

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We would fain add a paragraph in relation to the pastoral life of the ancients; a subject which forms one of the many interesting topics of this welcome book. We cannot, however, defer to a future opportunity an expression of our extreme gratification with the entire work, and a hope that it will be appreciated by the reading public in a manner in some degree commensurate with its merits.—*True Sun.*

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DR. CHRISTIE, the original inventor and patentee of these celebrated articles, informs the public, that the ONLY place in New York to obtaim them GENUINE is at 134 Fulton street, Sun building. In all cases of RHEUMATISM and Nervous Complaints, no matter how chronic or severe in their character, the GALVANIC RINGS and MAGNETIC FLUID are a *positive* and *permanent* cure, and every day brings fresh evidence of their wonderful efficacy in cases where every thing else has entirely failed.

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THE cheapest office in this city for Dental operations is Dr. Brown's, 280 1-2 Broadway, between Reade and Chambers st.

Natural and mineral teeth inserted from	$1 to 3 50
Decayed teeth filled with white cement,	
and warranted useful for mastication,	50
Toothache cured effectually without pain,	50
Teeth extracted with less than half the usual pain	50

Dr. BROWN,

280 1-2 Broadway, 3 doors above Chambers, next to Stewart' & Co.'s new store.

References can be had from several hundred families, also to the medical faculty of the city. nov18

GALVANIC APPARATUS.

DANIEL DAVIS, Jr., 428 Washington street, Boston, manufactures all the variety of philosophical apparatus, connected with Magnetism, Galvanism, Electro-magnetism, and Magneto Electricity. He has constantly on hand a variety of Electro-magnetic machines, permanent magnets, Galvanic Batteries, &c. For sale on the most liberal terms. nov18

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THE ENGINEER'S AND MECHANIC'S COMPANION.

Comprising Weights, Measures, Mensuration of superfices and solids, tables of squares and cubes,—square and cube roots, circumference, and areas of circles, the mechanical powers, centres of gravity, gravitation of bodies; strength, weight, and crush of materials; waterwheels; hydrostatics, hydraulics, statics, centres of percussion and giration; friction, heat, tables of weight and metals; pipes, scantling, and interest; steam and the steam engine.

By J. M. SCRIBNER, A. M.

Recently published, and for sale by

HUNTINGTON & SAVAGE,
216 Pearl st., price $1,12 to $1,50.

Por sale, also, at this office. jny1

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Gentlemen's Furnishing Store,

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One door from Franklin Square, New York.

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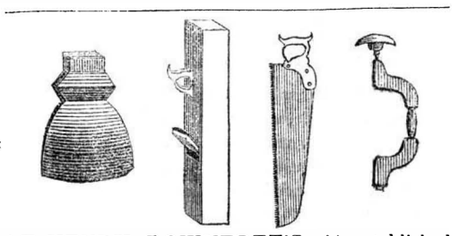

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H. R. feels obliged to his many customers, of every class, for their past patronage and hereby assures them that no pains shall be spared to procure the best articles in all variety.

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☞ Remember, at the corner of Chambers and Chatham streets. dec26

Levi Chapman.

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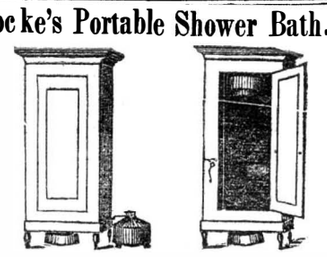
On the most extensive scale.

L. C.'s facilities for manufacturing Pocket Books, or Wallets, for the supply of those wholesale dealers who buy to sell again by the gross or dozen, are unequalled, he having employed for the last ten years from 50 to 270 workmen. His present well regulated system of *division of labor*, enables him to supply these articles at a very great reduction, at least one third less than former prices.

Strops retailed at from 50 cents to $1,00 each, varying only in outward finish and size—warranted to please or the money returned. jan22.

Locke's Portable Shower Bath.



THE subscriber has the satisfaction to announce to the public, that he has perfected, and is prepared to furnish at short notice, a portable shower-bath, far superior in utility and convenience of management, to anything of the kind hitherto offered. It constitutes a light and genteel article of furniture for a bed-chamber, and so perfectly constructed, that either a lady or gentleman can at any moment enjoy a copious shower without the id of servants, and withodt having a drop of the water sprinkled on the carpet or floor. And by a slight change in a part of the apparatus, the same may be converted to a steam-bath, either plain or aromatic. These baths are manufactured and may be examined at No. 31 Ann st. JOHN LOCKE.

Dec 4.

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Dec. 25.

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PROSSER'S PATENT.

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Nov 19tf.

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